

### Remarks/Arguments

Claims 1 - 16 remain in this case .

Claims 1 and 9 are under a rejection based on 35 U.S.C. 102(b) as being anticipated by Mitsuya et al. (4,424,974), with the Examiner commenting, with regard to claim 1, "Mitsuya teaches a contaminant collector having magnetic characteristics (Fig. 2) being mounted in a box 1 in a location closely adjacent a top surface of a seal 5 so as to intercept and collect ferric contaminants before they engage the seal", and with regard to claim 9, "Mitsuya teaches a contaminant collector having magnetic characteristic (Fig. 2) being mounted above and closely adjacent seals 5 so as to intercept ferric contaminants settling towards the associated seal". It is respectfully submitted that this rejection is in error as the Mitsuya et al. simply do not disclose the structure claimed.

Specifically, among other structure, each of claims 1 and 9 requires a gearbox, with that of claim 1 including a **low section** and with that of claim 9 including a **pair of depending wells**, the low section of claim 1 and the pair of wells of claim 9, each having a **bottom wall**, a **rotatable drive shaft** extending through each bottom wall and coupled to the gearing, a seal located on each rotatable drive shaft and a contaminant collector having a magnetic characteristic being mounted in the gear box above each seal so as to collect contaminants before they reach the seal.

Mitsuya et al. disclose a magnetic fluid seal which utilizes so-called ferro fluid to seal the interface between a spindle 2 and a housing 1 with the ferro fluid actually sealing the gap between yokes 4a and 4b of the magnetic seal and the spindle, as shown at 5, in FIG. 1. No where in the disclosure of Mitsuya et al. is there found mention of a gearbox having a low section or a well which include a bottom wall, nor is there disclosed a drive shaft extending through the bottom wall **and a contaminant collector separate from** the seal as claimed.

Thus, claims 1 and 9 are thought to define patentably over Mitsuya et al.

Claims 1, 2 , 9 and 10 are under a rejection based on 35 U.S.C. 102(a) as being anticipated by Hauser et al. (6,122,996), with the Examiner stating that "Hauser teaches a contaminant collector 55 having magnetic characteristics being mounted in a gear box in a location closely adjacent a top surface of said box so as to intercept and collect ferric contaminants before they engage the seal (at wall of gear box: Col. 7, lines 9-11); that the "contaminant collector is mounted for rotation

with said shaft (Col. 7, lines 7-8); and that the “contaminant collector 55 having a magnetic characteristic being mounted above and closely adjacent seals (at the wall of gearbox) so as to intercept ferric contaminants settling towards the adjacent seals (Col. 7, lines 9-11). Applicant respectfully submits that this rejection is in error as Hauser et al. simply do not disclose the claimed subject matter.

Again, applicant's base claims 1 and 9 each require a gearbox having a bottom wall either in a low section or well of the gearbox, a drive shaft rotatably mounted in the bottom wall **and coupled to the gearing**, a seal mounted between the drive shaft and bottom wall and a contaminant collector having a magnetic characteristic mounted above and adjacent to the seal for intercepting contaminants before they reach the seal. This environment is important since, in the prior art, the **rotating drive shaft** would move the contaminants such that they would abrade the seal and cause the latter to fail. Furthermore, claim 9 requires a **sugar cane base cutter leg having a shaft section**.

Hauser et al. disclose a gearbox including a vertical input drive shaft 24 extending through a **top** wall of the gear box coupled for driving hydrostatic components, in turn, coupled for driving horizontal axles 90A and 90B. As can best be seen in FIG. 8, there is **no rotatable drive shaft, coupled to gearing**, provided in the bottom wall of the gearbox (gear case 21). Accordingly, there is **no seal** provided between such a drive shaft and the bottom wall, as claimed. Magnet 55 is mounted to a **bypass actuator** rod 52 which projects through a **left side wall** of the gear case 21. Hauser et al. teach that this rod may project through the bottom wall of the gear case for **direct engagement** with the tab 51, in which case it would need to reciprocate, not rotate, to actuate the tab. In any event, the **rod 52 is not a drive shaft**, and in the illustrated embodiment, is not closely adjacent to and above any seal, even if it is assumed one is used since none is disclosed. Furthermore, as to claim 9, Hauser et al. do not disclose the claimed **sugar cane base cutter leg**.

For the reasons stated above, the rejection of claims 1 and 9, as being anticipated by Hauser et al., is thought to be in error. Claims 2 and 10 respectively depend from claims 1 and 9 and are likewise thought allowable over Hauser et al.

Claims 2 and 10 are thought allowable for the additional reason that each requires the contaminant collector to be mounted for rotation with the drive shaft and no such combination is present in Hauser et al., since the bypass operating rod 52 is not the required transmission drive shaft, and there is a considerable difference

between a rod which is occasionally oscillated manually and one which is continuously driven during operation of the transmission.

Claims 3, 4, 11 and 12 are under a rejection based on 35 U.S.C. 103(a) as being unpatentable over Hauser et al. in view of Van De Venne et al., with the Examiner stating that, with regard to claim 3, "Hauser teaches the gear box wherein said contaminant collector includes a ring fixed to said shaft via any conventional method, but lacks the specific teaching of said ring being press fit onto said shaft" and that "Van De Venne teaches a ring 9 that is fixed to a shaft 11 via press fit (Col. 2, line 35)"; and that it "would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hauser to employ a press fit in view of Van De Venne, since a press fit is a known conventional attachment method".

Claim 3 depends from claim 2 and is thought allowable over Hauser et al. in view of Van De Venne et al. for the same reasons discussed above relative to the rejection of claims 1 and 2 as being anticipated by Hauser et al. since Van De Venne et al. does not overcome the deficiencies of Hauser et al. noted in this discussion.

Claim 4 depends from claim 3 and is likewise thought allowable over Hauser et al. in view of Van De Venne et al. Claim 4 is thought allowable for the additional reason that neither Hauser et al. nor Van De Venne et al. disclose a ring having a magnetic component fixed to the top of the ring. While the Examiner has taken the position that the claimed magnetic component is "the top of the magnet that is integral with the whole magnet", it is respectfully submitted that this construction is strained and not well taken since the magnet in Hauser et al. is in the form of a ring and it is not logical to say that the top of the ring is a magnetic component fixed to the top of the ring.

Claim 11 depends from claim 10 and is thought allowable over Hauser et al. in view of Van De Venne et al. for the same reasons discussed above relative to the rejection of claims 9 and 10 as being anticipated by Hauser et al. since Van De Venne et al. does not overcome the deficiencies of Hauser et al. noted in this discussion.

Claim 12 depends from claim 11 and is likewise thought allowable over Hauser et al. in view of Van De Venne et al. Claim 12 is thought allowable for the additional reason that it requires there to be at least one magnetic component fixed to each ring and no such combination of a ring and magnet is disclosed. While the Examiner has taken the position that the claimed magnetic component is "the top of

the magnet that is integral with the whole magnet", it is respectfully submitted that this construction is strained and not well taken since the magnet in Hauser et al. is in the form of a ring and it is not logical to say that the top of the ring is a magnetic component fixed to the top of the ring.

The Examiner considers claims 5-8 and 13-16 to contain allowable matter. In view of the discussion above, these claims are thought to depend from allowable claims, and accordingly are thought allowable.

"Version with Markings to Show Changes Made"

In the Claims:

1. (amended) In a gearbox containing gearing and having a low section having a bottom wall, a rotatable drive shaft extending through said bottom wall, and being coupled to said gearing, and a seal located for preventing oil from leaking along an interface including a surface section of the shaft where it enters said bottom wall of the gearbox, the improvement comprising: a contaminant collector having magnetic characteristics being mounted in said gearbox in a location closely adjacent a top surface of said seal so as to intercept and collect ferric contaminants before they engage the seal.

In conclusion, it is believed that this application is in condition for allowance, and such allowance is respectfully requested.

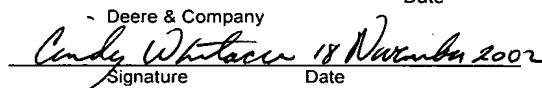
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Respectfully,

  
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